Washington State Department of Labor & Industries

Electrical Currents

Newsletter from the Office of the Chief Electrical Inspector

Rod Mutch, Chief Electrical Inspector **Vol. 16 No. 4** **April 2013**

Question of the Month

What size copper equipment bonding jumper is required to be run with the 3/0 copper phase conductors from the source of a separately derived system to the first disconnecting means sized at 200 amps?

Safety Tip of the Month!

Use ground fault circuit interrupters (GFCI) to reduce the risk of shock. GFCIs shut off an electrical circuit when it becomes a shock hazard. Current National Electrical Code requirements require these devices in new home bathrooms, kitchens, and garages. All outdoor receptacles should be GFCI protected. Test GFCIs once a month to make sure they are working properly.

Note From the Chief

Springtime brings a new season of growth and change. We have a new ***Governor***, a new ***Director*** at L&I, and a new chief electrical inspector. One thing that will not change is our commitment to L&I's mission to ***Keep Washington Safe and Working***. The electrical program performed almost 180,000 inspections in the past year to help ensure that Washington is an electrically safe place for consumers to live and work. Our inspectors, auditors, and ***E-CORE*** team members perform compliance investigations to help ensure that electrical installations are performed by qualified electrical contractors and electricians. They also help ensure that legitimate contractors do not have to compete against the underground economy and contractors who try to gain unfair competetive advantage by violating the electrical laws.

As the economy improves and electrical work increases, the Department must continue to work as efficiently as possible to provide the best service to our customers. The electrical program has become more efficient by using principles learned using the Toyota Production System's LEAN process to identify and eliminate waste and standardize our processes. We continue to improve our efficiency by expanding LEAN to all workgroups including program supervision and management. Customer needs define value for any process. LEAN distinguishes steps that create value from those that do not. A LEAN culture is based upon continuous improvement and respect for people who do the work. We continue to challenge ourselves to provide our customers with better value by eliminating waste within our processes. This aligns with L&I's mission of Keeping Washington Safe & Working by providing safety, service, and value.

Safety on the Jobsite

Electricians and electrical inspectors are exposed to various jobsite hazards daily while performing their job duties. The Department takes the welfare of its employees very seriously. Any jobsite where an inspection is to be made, must meet minimum safety requirements before the inspection can be performed.

In particular:

- In accordance with ***WAC 296-155 Part C-1***, all fall hazards of four feet or greater must be abated using adequate guardrails or additional fall protection will be required.
- Adequate access ways must be maintained in the inspection area. This includes removing tripping hazards and sufficiently covering or identifying any floor openings.
- Stairways and construction openings must be protected on all open sides by adequate guardrails.
- Illumination must be provided in interior areas where ambient light does not provide a safe level of illumination.
- If the inspection requires a vertical elevation change of more than 18 inches a ladder, stairway or ramp must be provided.

If fall protection is required, (e.g., fall arrest, fall restraint, etc.), or if the inspection is on a roof of any kind (including large flat roofs), alert the inspector prior to the inspection by describing the hazard in detail in the inspection request

comments. If the jobsite does not meet the minimum safety requirements, a correction will be written and a trip fee may be assessed.

For questions about jobsite safety for inspections, you may contact Ed Whitney at 360-902-4243.

Electrical Board Openings

There will be three openings on the Electrical Board in July. Bruce Turner, Rocky Sharp, and Don Guillot have served the board faithfully and I would like to thank them for all their hard work and dedication to the electrical industry. The three available positions are the licensed professional electrical engineer seat, the electrical contractor's association seat, and the outside line worker's seat.

Anyone interested in applying for one of these openings must submit an application using the form on the Governor's website at: ***http://governor.wa.gov/boards/application/application.asp***. Application must be made using the Governor's form. Send your resume and any additional information you would like considered in a separate email to the Boards and Commissions mailbox at: ***GovernorBoardsandCommissions@gov.wa.gov***. Recommendation letters should be sent to the Governor's office. If you have questions about the positions or the Electrical Board, contact: Elyssa Zyski at 360-902-5249.

Communications and Limited Energy Cables Installed in Wet Locations

An article entitled *Telecommunications Conductors and Cables Installed in Wet Locations* appeared in the ***April 2005*** edition of the *Electrical Currents* newsletter. At that time, communications cables suitable for use in wet locations were not widely available. Cables are now available in Categories 5, 5e, 6, and 6a that are approved for use in wet locations. Some manufacturers will not warrant the installation of cables in wet locations unless they are approved for such use. The department will no longer accept the installation of cables in underground raceways or in other wet locations as defined by the National Electrical Code unless they are suitable for use in wet locations.

Nonprofit Organizations – Contractor Exemptions

In the 2003 Legislative Session a bill was passed that allows an electrical contractor licensing exemption for a nonprofit corporation under 26 U.S.C. Sec. 501 (c)(3). ***RCW 19.28.091(7)*** allows the nonprofit corporation to use appropriately certified electricians and supervised trainees to perform electrical installation, repair, or maintenance on nonprofit corporation facilities. Volunteer electricians and trainees cannot receive any type of compensation for the work.

The total value of the electrical work (e.g., design, labor, materials, equipment, permits, etc.) for the entire project cannot exceed $30,000. The project cannot be done in phases in an attempt to stay below the $30,000 maximum.

Although exempt from electrical contractor licensing, the nonprofit corporation must obtain the proper electrical work permits and ensure they follow all electrician certification and trainee supervision requirements of chapter 19.28 RCW. Any group attempting to purchase a permit under this exemption should be prepared to supply a copy of the "qualifying" letter from the Internal Revenue Service (IRS) granting the entity the right to claim 501(c)(3) non-profit status.

The statute change did not grant these exemptions to U.S.C. Sec. 501(c)(4) entities (e.g., civic leagues, social welfare organizations, and local associations of employees with earnings devoted exclusively to charitable, educational, or recreational purposes).

Ugly Installations Online readers - click on the picture to open larger images. Violation: WAC 296-46B-901 - Electrical permit and inspection required, too many corrections to list – An electrical contractor was hired to correct this very unsafe installation.

Answer to Question of the Month: 4 AWG copper – NEC 250.30(A)(2), NEC 250.102(C), Table 250.66